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USSR Report

HUMAN RESOURCES

No. 79

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LABOR

RSFSR LABOR POTENTIAL EXAMINED IN DETAIL

Moscow SOTSIALISTICHESKIY TRUD in Russian No 12, Dec 82 pp 34-42

[Article by Candidate of Economic Sciences V. Kalashnikov, deputy chairman of the RSFSR State Committee for Labor: "The Reserves of Labor in Soviet Russia"]

[Text] The 60th anniversary of the Soviet Union is a significant and joyful event in the life of the peoples of the RSFSR. For our republic was the first one, the mighty and indestructible community of socialist nations formed around it. The contribution of the workers of the RSFSR, who at all the stages of the building of socialism and communism gave unselfish assistance to the peoples of the former backward outlying districts of tsarist Russia and helped them to develop a strong modern industry and developed agriculture, is great in the achievements of each of the fraternal republics. In turn representatives of all the republics, many nations and nationalities of our country are working at the great construction projects of Siberia and the Far East and in the Nonchernozem Zone of the RSFSR.

In greeting today the national holiday--the 60th anniversary of the formation of the USSR--we distinctly recall Lenin's instructions that the best way to mark a festive date is to focus attention on the unsolved problems. And many problems will have to be solved during the current five-year plan; moreover, they are all complicated and crucial.

During the 11th Five-Year Plan the volume of industrial production in the RSFSR should increase by 24-27 percent, the gross output of agriculture--by 13-15 percent. And this is under the conditions when a shortage of manpower is being felt in the republic. The forming shortage of manpower resources, especially in the zones of the formation of large territorial industrial complexes, predetermines the need for the development of production for the most part by the rapid increase of labor productivity, which during the 5-year period should come to 21 percent, including 22 percent in industry, 15 percent in construction and 25 percent in agriculture (in average annual terms).

In order to ensure the accomplishment of this task, the RSFSR State Planning Committee and the RSFSR State Committee for Labor have drawn up for the industry, which is subordinate to the RSFSR Council of Ministers, for 1981-1985 the comprehensive goal program "Labor Productivity," which calls for its increase by 18 percent as against 10.4 percent during the 10th Five-Year Plan. By means of this nine-tenths of the increase of the output of industrial products should be obtained, and at operating enterprises it should be obtained with a smaller number of

industrial personnel who are engaged directly in production. Specific measures, which are aimed at the increase of the level of planning, organization and the technical equipment of production, are being implemented in the ministries, departments, associations and enterprises for the purpose of the successful implementation of the program.

On the Basis of Technical Progress and the Scientific Organization of Labor

It is planned to put the considerable reserves to use by the decrease of manual labor. Comprehensive goal programs, by which it is envisaged to decrease the proportion of manual labor from 42.9 to 36.4 percent and to provide one-third of the total increase of labor productivity, are being implemented in all the republic industrial ministries and departments, as well as on the whole for the industry which is subordinate to the RSFSR Council of Ministers. This rate exceeds by twofold the rate achieved during the last five-year plan. At present the drawing up of similar programs in construction and agriculture is being completed.

In order to ensure the more efficient use of internal production reserves, comprehensive goal programs have also been drawn up with a breakdown by territories. Of the 72 autonomous republics, krays and oblasts of the RSFSR they exist in 18 as a whole for the national economy and in 54 for individual sectors. Much has been done in this direction in Amur, Kuybyshev, Perm, Sverdlovsk, Chelyabinsk and a number of other oblasts. The program of Perm Oblast, for example, envisages in 5 years to mechanize and facilitate the labor of 35,000 workers and to decrease the level of the use of manual labor at industrial enterprises from 39.3 to 33.2 percent.

However, as the results of the first year and 7 months of the second year of the five-year plan show, the effectiveness of the measures being implemented for the present is still not ensuring the achievement of the planned indicators. Labor productivity in 1981 in industry of the republic increased by 2.9 percent with a plan of 3.4 percent. The RSFSR Ministry of the Meat and Dairy Industry, the RSFSR Ministry of the Fruit and Vegetable Industry, the RSFSR Ministry of the Food Industry and several other ministries are lagging especially significantly with respect to this indicator. The growth rate of labor productivity (2 percent), which was achieved in January-August of this year, for the present is also still considerably less than the planned growth rate for 1982 as a whole (3.3 percent). Here the increase of the average wage is leading the growth of productivity. In January-July 1982 in industry of the republic the average wage increased by 3.5 percent, while productivity increased by 1.8 percent, in construction they increased respectively by 4.4 and 1.5 percent.

Of course, the introduction of new equipment and complete mechanization and automation were and remain the main lever of the increase of production efficiency. However, practical experience convincingly shows that it is possible to achieve the greatest success only if technical, organizational and economic measures are implemented in combination. Incidentally, it is well known that the expenditures on the freeing of one worker owing to the more perfect organization of labor, as a rule, are considerably less than due to the use of new equipment.

In recent years RSFSR ministries and departments have begun to study more actively the questions of the scientific organization and rate setting of labor, which are being regularly examined at the meetings of the collegia and at republic and group

conferences. The work on providing practical assistance to associations and enterprises has been stepped up. All this is yielding positive results. By means of measures of the scientific organization of labor in the industry, which is subordinate to the RSFSR Council of Ministers, during the 10th Five-Year Plan half of the total increase of labor productivity was obtained, while during the current five-year plan as a whole for the national economy of the republic it is envisaged to free approximately 2-2.3 million workers.

Standard plans of the organization of labor are being used more and more extensively in the RSFSR. In 1981 alone in industry of republic subordination the workplaces for 119,000 workers and 23,000 engineering and technical personnel and employees were organized in accordance with them. The overall improvement of the organization of labor on the basis of standard plans was carried out in 2,340 shops and 7,150 production sections. This work was performed actively at the enterprises of the RSFSR Ministry of Consumer Services, the RSFSR Ministry of the Textile Industry, the RSFSR Ministry of Light Industry and a number of other ministries and departments. For example, the proportion of the workers, who were employed at workplaces organized in accordance with standard plans, at the Rosshveyprom Industrial Association came to nearly 50 percent, the effectiveness per ruble of expenditures came to 1.5 rubles. The introduction of measures of the comprehensive plan of the organization of labor at the Bol'shevik Mine of the Oblkemerovougol' Production Association made it possible to increase labor productivity by 10 percent and to obtain a saving of 138,000 rubles.

Thus, we have some gains in the area of the use of standard plans, but the possibilities of saving manpower resources on such a basis are being utilized far from completely. For example, it is well known that at present thousands of plans, in accordance with which it is possible to organize the labor of 70 percent of the workers, and its productivity at each workplace can be increased by 5-6 percent, have been drafted in our country. And nevertheless last year many ministries and departments did not fulfill the plan assignments on their introduction. In industry of republic subordination only one-fifth of the workers of the mass occupations are working according to the plans. By the end of the five-year plan on the basis of the achieved rates and in conformity with the plans of the ministries this figure should be increased to 32-35 percent, which is also entirely inadequate.

What is checking the implementation of standard plans of the organization of labor? The point is first of all that the necessary office equipment does not exist. So far in practice it is not being designed and is not being produced centrally. The experience, which exists in this respect in the system of the USSR Ministry of the Machine Tool and Tool Building Industry and the USSR Ministry of the Radio Industry, for the present is being disseminated extremely slowly.

Another cause is the low quality of individual plans. In this extremely rigid demands on production conditions are stipulated, which is connected with the great expenditures, but no substantial improvement of the technological processes is planned and, hence, the assets being spent will not be recovered. Moreover, as the checks made by our committee showed, the sectorial centers for the scientific organization of labor and the management of production do not always give enterprises the necessary assistance and in essence are not taking steps to expedite the introduction of the approved plans. In this connection it seems advisable to us to establish such a procedure so that the ministries and departments would approve

them only after full-scale implementation and a production check at the base enterprise. Thus the efficiency should also be determined.

More Output With a Smaller Number of People

The greatest reserve of the increase of labor productivity and the improvement of the use of manpower resources is the further development of the brigade form of the organization and stimulation of labor. During the first year of the five-year plan in RSFSR industry the number of workers united into brigades increased considerably and came to 52 percent of their total number. Of them 81 percent are paid in accordance with a single order. The qualitative composition of the primary labor collectives has also changed. The proportion of multiple-skill brigades increased to 42 percent, including multistage brigades to 18 percent, the proportion of small brigades decreased, it now comes to less than one-third. The collective wage in one out of four collectives is distributed according to the coefficient of labor participation. In a number of sectors the coverage of workers by the brigade form is even higher, for example, in the RSFSR Ministry of the Meat and Dairy Industry, the RSFSR Ministry of the Fish Industry and the RSFSR Ministry of the Food Industry it came to 60-67 percent.

Positive experience in the use of the brigade form has been gained at many enterprises and production associations of the RSFSR. Thus, at the Voronezh Silica Brick Plant the brigade of S. Chernousova, while working with a smaller number, last year increased the labor productivity by 21.6 percent. At the enterprises of the Stavropol Production Association of the RSFSR Ministry of the Meat and Dairy Industry 73 percent of the workers work in brigades. Each of them has a labor passport, three-fourths of the primary collectives distribute wages according to the coefficient of labor participation. As a result at the association the plans on the increase of labor productivity are regularly exceeded, there are practically no losses of working time due to violations of discipline. In the construction industry of the republic at present about 40 percent of the total amount of construction and installation work is performed by the brigade contract method, the labor productivity in the contracting collectives is 1.4-fold higher than the average indicators. In agriculture 41 percent of the workers are covered by all types of the collective forms of the organization of labor.

And nevertheless the analysis shows that for the present the requirements set forth in the decree of the CPSU Central Committee and the USSR Council of Ministers on the improvement of the economic mechanism are still not being fully observed. Frequently in pursuit of the number the brigades are created without the proper engineering preparation, in connection with which the necessary increase of labor productivity is not ensured. For example, in the five-year plans of a number of ministries its increase due to this factor does not exceed 1 percent in 5 years. In other words, low efficiency has knowingly been incorporated in the plans themselves.

It was revealed by the checks of the committee that at individual enterprises and associations during the formation of brigades the elementary conditions are violated, the types of jobs attached to them, the possible versions of interchangeability and efficient forms of material and technical supply and planning are not determined in advance, a search is not made for effective systems of the stimulation of labor. One of the causes of the low efficiency of the brigade form of the

organization of labor is also the fact that for the present it is being poorly disseminated among auxiliary workers: on the average for the industry, which is subordinate to the RSFSR Council of Ministers, their share in the primary labor colectives is five-eights as great as that of the basic workers, while at some enterprises they have even not begun the organization of brigades in the ancillary shops and sections. And even where the auxiliary workers are united along with the basic workers into multiple-skill brigades, the former procedure of the payment for labor is frequently retained for them, an interest in the increase of the production of the final product by the basic workers is not being created. As a result one of the main conditions of the efficiency of brigade labor--an interest in the combining of occupations--is lost.

Cost accounting, which provides a saving of past labor, is being introduced extremely slowly in the primary collectives. The number of cost accounting brigades in the industry, which is subordinate to the RSFSR Council of Ministers, comes to only 8 percent, while at the enterprises of the RSFSR Ministry of the Food Industry, the RSFSR Ministry of the Fuel Industry and the RSFSR Ministry of the Fruit and Vegetable Industry it comes to not more than 2 percent. In December 1981 USSR Gosplan, the USSR Ministry of Finance, the USSR State Committee for Labor and Social Problems and the AUCCTU adopted the Statute on the Procedure and Amounts of the Contributions to the Economic Stimulation Funds for the Saving of Material Resources in Industry for 1983-1985. It increases considerably the possibilities of enterprises and associations. The task now is to take steps on the further improvement of cost accounting in the shops and sections, to improve the rate setting and accounting of material resources and on this basis to develop at each enterprise effective systems of the stimulation of brigades for their saving. For the purposes of the utmost increase of the efficiency of the brigade form it is also expedient in each sector to check experimentally at the base enterprises the optimum compositions of the brigades and the model recommendations on the payment for labor for all types of works.

A major reserve of the increase of labor productivity is the further development of the combining of occupations and multiple-machine service, the possibilities of which have now become considerably more extensive. In a number of sectors quite good results have been achieved in this area. For example, at the enterprises of the construction materials industry and procurement in 1981 one worker in three among those who had mastered additional occupations were freed. The enlargement of the areas and multiple-machine service in the system of the RSFSR Ministry of the Textile Industry made it possible during the same year to free 2,300 people.

At the same time, in spite of the great efficiency of these forms of the organization of labor, as a whole for the industry, which is subordinate to the RSFSR Council of Ministers, only 5 percent of the workers are covered by them. Some ministries and departments so far have not approved the sectorial lists, in accordance with which it is recommended to combine occupations and positions, as well as to increase the service areas or the amounts of work. In some sectors the instruction in second and related occupations has not been organized. For example, in local industry, personal service and the river fleet and at the enterprises of the RSFSR State Committee for the Supply of Production Equipment for Agriculture the proportion of the workers, who have mastered second and related occupations, comes to only 15-22 percent of the total number of those who have increased their skills.

The Shchekino method is helping to develop the combining of occupations and to expedite on this basis the increase of labor productivity. At present it has been successfully adopted at 8.5 percent of the enterprises which are subordinate to the RSFSR Council of Ministers. Thus, at 128 associations and enterprises of the RSFSR Ministry of the Food Industry, which operate in accordance with the Shchekino method, in the past 2 years alone 3.9 percent of the workers were freed due to the combining of occupations, the increase of the amount of work and the implementation of other measures (on the average for the ministry 2.8 percent were freed). At 10 associations and enterprises of the RSFSR Ministry of Rural Construction these figures come respectively to 10.8 and 5.4 percent. In those sectors, in which the Shchekino method is not being used comprehensively, for example, in forestry and the fuel industry, as a result of such steps the number of workers is decreasing extremely negligibly.

It should especially be emphasized that whereas previously the dissemination of the Shchekino method was held back, since there was no stability in the planning of the wage fund, while the ministries redistributed its saving in favor of the lagging enterprises, now the planning of the wage according to stable standards per ruble of output, which is being carried out in conformity with the decree of the CPSU Central Committee and the USSR Council of Ministers on the improvement of the economic mechanism, in practice eliminates these obstacles. Moreover, the additional payments for the combining of occupations have been increased, it is permitted to transfer the saving of the wage fund to the incentive funds. Other benefits have also been established. Taking all this into account, one should introduce the Shchekino method more boldly in all sectors and thereby induce the managers of enterprises and associations to utilize more completely all the possibilities of producing more products with a smaller number of personnel.

Introduce Advanced Norms of Labor Everywhere

For the fulfillment of the established assignments on the increase of labor productivity it is very important to improve its norm setting. As a whole for the industry, which is subordinate to the RSFSR Council of Ministers, the proportion of the workers, for whose labor norms are set in accordance with the sectorial and intersectorial standards, came to 71 percent, the norms are fulfilled on the average by 122.2 percent. At the same time, as the checks show, the managers of associations and enterprises have relaxed the attention to the revision of the norms in proportion to the organizational and technical improvement of production. As a result at individual enterprises and for some sectors as a whole the exceeding of the norms has even begun to increase more rapidly than labor productivity. And therefore the average wage is also beginning to increase at a leading rate and the number of people, who are being freed owing to the revision of the norms, is decreasing. For example, according to the results of 1981 in the system of the RSFSR Ministry of the Meat and Dairy Industry labor productivity decreased, while the fulfillment of the output norms increased by 1.3 percent, in industry of the RSFSR Ministry of Rural Construction the productivity increased by 0.8 percent, while the fulfillment of the norms increased by 1.3 percent.

Moreover, at the associations and enterprises of a number of sectors the following negative trend has also been noted: a significant number of norms are being revised downward. Spot checks show that frequently they are set too low for the purpose of providing the workers with the wages which they lose due to shortcomings

in the organization of production and labor and long idle times. Thus, at the Bezhitskiy Steel Works in 1981 291 norms were revised downward, during the first half of 1982 52 were. This is one of the reasons that during the same period the average wage according to the growth rate began to lead labor productivity. At the Barnaul Motor Vehicle Repair Plant last year six output norms, which were fulfilled by 167 percent, were decreased, in connection with which the labor productivity in these operations decreased to ten-seventeenths. At the Krasnodar Canning Association in the unloading of boxes from trucks the norms were fulfilled by 90 percent. After their reduction by one-half the labor productivity decreased to ten-seventeenths, which was one of the causes of its decrease as a whole for the association.

For the elimination of such phenomena it is expedient, in our opinion, to establish a procedure so that the managers of enterprises and associations would report the causes of the reduction of the norms to superior organizations, if the revision was not due to the need to correct previously committed technical errors when determining the level of the norms or to a change of the technology and quality of items.

Another undesirable trend was also revealed. Some ministries and departments, enterprises and associations, while using the norms as a regulator of the level of wages, at the same time are not using flexibly enough the established bonus systems, which checks the introduction of advanced intersectorial and sectorial standards. Thus, in the system of the RSFSR Ministry of Rural Construction, in which the norms are fulfilled on the average by 138 percent, the proportion of the bonuses in the wages of piece-rate workers comes to only 6.5 percent.

The introduction of technically sound norms is also being checked by the inadequate use of the established forms of material stimulation when working in accordance with them. In particular, it is a question of the piece rates and additional payments to workers, which have been increased by 20 percent, for the period of the assimilation of the new norms for a period of up to 6 months, the payment of one-time bonuses to foremen and other engineering and technical personnel at the expense of the saving of the wage fund, which was obtained from the reduction of the labor intensity of items. Experience shows, for example, that the introduction of higher rates makes it possible to decrease substantially the standardized labor-output ratio.

Large reserves of the saving of manpower can be put to use by having improved the norm setting of the labor of the workers paid on a time basis and auxiliary workers, who account for approximately half of all the workers. Nevertheless here, too, there are still many unsolved problems. As a whole for RSFSR industry the labor of more than a fourth of the workers paid on a time basis, and at the enterprises of individual sectors more than 70-80 percent, is not being standardized, and checks show that the matter in general is frequently limited to the use of the sectorial standards of the number without the corresponding strengthening of the current norm setting of labor. This appears in the fact that at enterprises and associations standardized assignments are often not set for the workers paid on a time basis and the amounts of the bonuses are not differentiated with allowance made for the degree of their fulfillment. In those instances when the workers (for example, in the repair of equipment) do piece work, their wage is often made dependent on the amount of the fulfilled assignments, and not on the quality of the operation of the equipment and the output, by which in essence the increase of production expenditures is encouraged.

The increase of labor productivity can be sped up considerably by the decrease of the number of workers, who do not cope with the output norms, in agriculture as well. At present at kolkhzoes and sovkhozes, although major measures, which are aimed at the increase of the power-worker ratio and the improvement of the organization of labor and the production technology, have been implemented, the level of fulfillment of the output norms remains low. As a whole for sovkhozes of the republic the proportion of the shifts, in which this level does not exceed 80 percent, comes for tractor driver-machine operators to 14 percent, in loading and unloading work--19 percent, in manual operations in the harvesting of potatoes--26 percent, vegetables--18 percent, animal husbandry--8 percent. Estimates show that if the output here is increased to 100 percent, it will be possible to save the labor of more than 100,000 workers.

Use Scientific and Design Developments Better, Increase the Level of Planning

In the matter of the further increase of the efficiency of labor a significant role belongs to scientific subdivisions, the centers of the scientific organization of labor and the management of production and standards and research laboratories. At present approximately 8,000 people are employed in such subdivisions in the republic ministries and departments alone. The check made by our committee at the centers of the scientific organization of labor of the RSFSR Ministry of the Fuel Industry and the RSFSR Ministry of Forestry showed that they perform important and quite efficient work, but in their activity there are also significant shortcomings, which reduce to the performance of uncharacteristic functions, the duplication of themes, the low quality of individual developments, the study of minor themes and the poor effectiveness of the measures being implemented. Moreover, these organizations are helping associations and enterprises too little to improve the organization and norm setting of labor and to introduce advanced know-how, especially the Shchekino method and the brigade organization of labor. Last year the effectiveness of the measures of the scientific organization of labor per ruble of expenditures as a whole for the industry, which is subordinate to the RSFSR Council of Ministers, decreased by 14 percent, while for some ministries and departments it is not covering the production expenditures. Therefore in every sector the level of management of the services of the scientific organization of labor and the effectiveness of their activity should be increased.

The national economy is incurring great losses due to the untimely achievement at many projects of the planned level of labor productivity and the number of workers. For example, the spot check at 16 projects, which were put into operation during the 10th Five-Year Plan at enterprises of the RSFSR Ministry of the Construction Materials Industry and the standard periods of the assimilation of the capacities for which had elapsed, showed that at 15 of them the indicators on labor productivity and the number of industrial personnel engaged directly in production do not conform to the rated indicators. At half of the projects 50 percent of the planned level of labor productivity had also not been achieved, while there are many more workers than was envisaged. Thus, at the Yasnaya Polyana (Penza Oblast) and Kabakovskiy (the Bashkir ASSR) plants of silica wall materials and the Glubokiy (Rostov Oblast) Silica Brick Plant the actual number of workers exceeds by more than twofold the planned number. Such examples exist at the enterprises of practically all the sectors.

The fact that new projects are being designed with the inadequate and incomplete mechanization of technological processes, without consideration of the requirements of the scientific organization of labor, is also hindering the timely achievement of the technical and economic indicators established by the plan. For example, at the newly built Kasli (Chelyabinsk Oblast) Bakery the level of manual labor is higher than at operating enterprises of the sector and comes to 65.5 percent. The situation is the same at the Chelyabinsk Brewery, the Magnitogork Fish Processing Plant and a number of other enterprises. In this connection it would be advisable in every sector to elaborate the maximum standards on the level of the use of manual labor at new facilities so that in case of their exceeding the plans for new construction or renovation would not be approved. It is also necessary to improve the expert appraisal of the plans, which is called upon to ensure the consideration of the sectorial requirements of the scientific organization of labor, which today, as the checks show, is frequently not observed.

The balance of manpower resources and the limits of the number of workers with the actual availability of manpower has a direct influence on the level of the organization of labor. Its shortage causes considerable losses of labor, which are due to the turnover of personnel, shortcomings in the organization of wages and violations of labor discipline, and leads to the outflow of young people from the countryside. As a whole for the national economy of the republic the annual shortage of manpower is quite high, and it, in our opinion, can be reduced substantially when drafting the annual plans by the distribution of the corresponding number of workers among the sectors.

It is more difficult to achieve a balance by ministries, departments and regions, since the leading development of some of them cannot always be backed with the manpower, which has been freed from their own enterprises and organizations, as well as due to the natural increase of manpower resources. Therefore, in the republic steps are presently being taken to improve the procedure of the coordination by enterprises and organizations with the local soviets of people's of deputies of the increases of the limits of the number of workers and employees, which are called for by them in the drafts of the five-year and annual plans. The effectiveness of this work is increasing with each year. For example, when drawing up the draft of the plan for 1983 in accordance with the operational data such coordination locally was carried out for 3,377 enterprises and organizations, of them 720 were denied an increase of the number of personnel, the planned need for it was reduced for the remainder by more than one-third. In order to achieve greater effectiveness in all regions, it is necessary to ensure the further increase of the quality of the balances of manpower resources, to report in good time to the enterprises the control figures on the number of personnel and to work out a mechanism of the coordination within the region of the increases of its limits with the freeing of people from operating enterprises.

For the purpose of solving this problem comprehensive goal programs of the increase of the efficiency of the use of manpower resources already exist or are being drawn up in a number of regions. They are being drawn up with a breakdown by sectors and territories and include an analysis of the situation with manpower resources, the means of their balancing and the main directions, in which the required growth rate of labor productivity can be achieved. At present such programs have been approved in Moscow and Krasnoyarsk Kray, they are being drawn up in Vladimir, Chelyabinsk, Orenburg and other oblasts.

Taking into account the national economic importance of such programs, the RSFSR State Committee for Labor has sent to all oblasts, krays and autonomous republics the corresponding procedural instructions. In them it is stipulated that the programs should not only generalize the five-year plans, which were approved by the ministries, of the enterprises and organizations located in the region, but also specify the means of increasing labor productivity in the amounts which are necessary to ensure the planned rate of the expansion of production, as a rule, given the available manpower resources.

The observance by enterprises and organizations of the set limits of the number is very important for the efficient use of manpower. They are usually adhered to, but at individual enterprises deviations are permitted, which, of course, disturbs the proportions of the development of the national economy. For example, during the first half of this year in the RSFSR one enterprise in five exceeded the set limits, in spite of the sanctions of the RSFSR State Bank and monitoring on the part of labor organs. In this connection, perhaps, the question of increasing the liability of the enterprises and organizations, which violate state discipline in the use of manpower resources, should be examined.

Thus, the reserves of labor in the national economy of the RSFSR exist practically everywhere. And our task is to see to it that the mechanism of putting them to use would work reliably.

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BRIGADE FORM OF LABOR ORGANIZATION EXPLAINED

Kiev Shoe Factory

Kiev EKONOMIKA SOVETSKOY UKRAINY in Russian No 11, Nov 82 pp 53-58

[Article by I. Rudoy, director of the Kiev Base Experimental Shoe Factory imeni 50-letiya Sovetskoy Ukrainy, and Candidate of Economic Sciences M. Zeyfman, chief of the Division of Labor and Wages of the Kiev Base Experimental Shoe Factory imeni 50-letiya Sovetskoy Ukrainy: "The Introduction of the Brigade Organization of and Payment for Labor"]

[Text] The task of the further increase of labor productivity in light industry by means of the available advanced know-how of the introduction of the brigade forms of the organization and stimulation of labor, the increase of the efficiency of the work of brigades, the introduction of the principles of cost accounting, the assurance of the more complete combination of the individual form of the organization of and payment for labor with the brigade form, the stepping up of the work of the councils of brigades and the increase of the role of the engineering support of the highly productive labor of brigades and workers is set in the adopted decree of the CPSU Central Committee, the USSR Council of Ministers and the AUCCTU "On Measures on the Further Increase of Labor Productivity at Light Industry Enterprises on the Basis of the Utmost Dissemination of the Brigade Form of the Organization of Labor and the Experience of the Work of Leading Workers on the Increase of the Equipment Service Areas and the Decrease of the Labor Expenditures on the Production of Output."

As is noted in the decree, at present in light industry of the country about 40 percent of all the workers are covered by the brigade form of the organization and stimulation of labor. The conditions for the decrease of the labor intensity and the acceleration of the growth of labor productivity are created by this advanced form of collective labor.

The brigade organization of labor makes the brigade completely responsible for the fulfillment on time of the production assignment entrusted to it on the quantity and quality of the output and for the efficient use of raw materials, materials, power, equipment and other means of production. The organization of the material stimulation of the labor of the workers of the brigade, on the basis of which the grouping of labor according to wage rates and the payment for it in conformity with the level of skill, complexity, difficulty and danger should not be violated, is exceptionally important. The wage rate system, which has given a favorable account

of itself over many decades, is called upon under the conditions of the work of brigades of the new type to promote to a greater and greater extent the combination of the personal interests of the brigade members with the interests of the enterprise and society.

The socialist principle of distribution according to labor to a considerable extent is realized under the conditions of the collective form of the organization of and payment for labor. It is objectively impossible to set exactly by operation the rate of labor due to the diversity of the factors which influence the complexity, intensity, difficulty and danger of labor. This peculiarity pertains both to the standards of the expenditures of working time, which are used for the calculation of the average progressive sectorial norms, and to the estimated norms which are in effect in real production. As a result, so-called profitable and unprofitable operations for the workers arise. The profitable ones are the jobs with a groundlessly overstated standard working time. The unprofitable ones are the jobs, in which the standard expenditures of working time are understated as against the actually necessary working time. The discrepancy in the determination of the labor being expended, for which rates are being set with respect to quantity and quality, unwittingly creates the prerequisites for the nonobservance of the principle of equal pay for equal labor.

The collective form of the organization of wages stimulates the redistribution among the workers of profitable and unprofitable operations, which is accomplished on the basis of the use of the stimulating power of the bonus portion of the wage by the use of coefficients of labor participation, the value of which is set at from 0 to 2. The mechanism of the collective redistribution of the bonus portion of the wage with the use of coefficients of labor participation stimulates the combining by the workers of unprofitable operations. The shortcomings and discrepancies in the rate setting of the expenditures of labor are corrected by this. The workers themselves regulate the workload of the workplaces and redistribute the bonus portion of the wage on the basis of the personal contribution of each member of the brigade. This is not regulated by an order on the part of management and, what is very important, is a decision of the workers themselves. For they know better, who is working how, who has contributed more labor to the fulfillment of the assignment, the increase of product quality, the tightening up of labor discipline and the decrease of the losses of working time, has helped his comrades in the mastering of new operations, the increase of their skills and so on.

In the brigade the functions of self-management increase, the role of the collective not only in the labor education of the individual, but also on the social level is enhanced. The brigade can influence a person more for the purpose of increasing the general educational, moral and cultural level. It is important for a positive psychological microclimate--benevolent relations among the brigade members--to exist in the collective of the brigade. The brigade form of the organization of and payment for labor makes it possible on the basis of the consolidation and combining of operations and collective interest in the results of labor to fill it with a new content and to eliminate the monotony in work.

Under the conditions of the frequent interchangeability of the range and assortment of items, when their labor intensity fluctuates sharply, situations of the underloading or overloading of the workers arise. In the case of underloading the workers lose wages, while in the case of overloading they do not fulfill the production

assignments in physical terms. In some instances in the case of underloading the management of one production subdivision or another strives to overstate the time allowance for the unjustified maintenance of the achieved level of wages. The brigade organization of labor requires a high level of the engineering preparation of production, promotes the improvement of all the organizational work and leads to a decrease of the instances of the adjustment of the standardized labor intensity to the established level of the wages.

Purposeful work on the development and implementation of a set of measures on the engineering support of collective forms of the organization and stimulation of labor is conducive to the successful introduction of the brigade form of the organization of and payment for labor. The brigade flows are the most acceptable form. Practice has suggested two versions of them. The brigade flows with 20 to 30 workers should be assigned to the first version. In this case the council of the brigade, which is headed by the brigade leader, consists of five people. The brigade flows with more than 30 people are assigned to the second version. In such cases the brigades are divided into links. When the brigade flow has 40 people, 2 links of 20 people each are created. The council of the brigade then consists of nine people headed by the brigade leader and the two link leaders. When the brigade flow has 70 or more people, 3 links are created. The council of the brigade consists of 15 people headed by the brigade leader and the 3 link leaders.

The division of the brigade flow into links, instead of the brigades in the flow, eliminates the need for the subdivision of the plan assignments and other indicators of production, which decreases the amount of the corresponding calculating and computing work, as well as the work on the determination of the actual indicators of the payment of bonuses and wages. The brigade flow ensures the meeting of the requirements of the collective interest in the results of labor, payment for the final product, the collective form of the distribution of the bonus portion of the wage with the use of coefficients of labor participation, an interest in the production of output with a smaller number of workers, collective responsibility and participation in the rate setting of labor. The rights and duties of the brigade leader, the council of the brigade and the link leaders are regulated by the appropriate statutes. When setting the assignment for 1982 to cover 28 percent of all the workers by the brigade form, in fact 45 percent of the workers at the factory were already covered.

The engineering support of the introduction of brigade forms of the organizations and stimulation of labor is based on a clear organizational and economic system of the technical preparation of the production of output at all stages--from designing and development to the production of finished items. The essence of the developed procedure is that the rate setting of labor is becoming a continuation of the development and improvement of the design of items, the technology and technical preparation of production. For this a number of organizational and technical documents have been drawn up, a system of their movement in coordination with all the technical specifications has been elaborated. Information, which is necessary for the organization of production, its process planning, the calculation of technical and economic indicators and the organization of wages, is included in the technical specifications. At the enterprise the structure and functions of the labor, technological and production services have been changed. The movement of information has been organized so that the technically sound rate setting of labor, the maximum loading of the flows and their prompt changeover to the output of new products are ensured.

The norms of the expenditures of labor are established during the period of the designing and development of the item and are based on the most advanced technological processes and equipment. Thus, long before the start of production the advanced technology and equipment are incorporated in the production processes, the best conditions for the introduction of brigade forms of the organization of labor are planned.

The fulfillment of the production assignments in the case of a wide assortment and the frequent periodic replacement of models is ensured by the efficient organization of planning, labor and production on the basis of the norms of labor expenditures, which have been elaborated in advance, on the basis of sectorial standards. The functions of the rate setting of labor are assigned to the sector of rate setting of the central technological laboratory, which is made up of process engineers and is a structural subdivision of the technological service. This makes it possible at the same time as the drawing up of the designs of items and the flow route to calculate the planned norms of the labor expenditures on the production of a specific model of footwear, on the basis of the previously achieved level of assimilation of the sectorial norms in each operation.

In a year about 400 models of footwear, of which more than 100 prototypes are selected for production, are developed at the factory. On the basis of the capacity of the flows and the formed average weighted standardized expenditures of working time, the sector of rate setting develops combinations of models, which differ in labor intensity, from among those chosen for production in order to ensure the maximum utilization of the production capacities and manpower resources and the fulfillment of the assignments of the enterprise on the assortment of footwear. The recommendations of the sector of rate setting on the combination of models are used when organizing production.

The increase of the production of output by means of the improvement of the methods of labor leads to a decrease of the expenditures of working time on their fulfillment. The timely revision of the norms of the expenditures of working time is objectively necessary, and efficient methods are needed for its assurance. The use of graduated norms of the expenditures of working time and rates, which take into account the periods of the assimilation in production of a new item, is one of them. Here with the assimilation and increase of the production of an item the coefficient of the assimilation of the sectorial labor intensity and the percentage of the bonus portion of the wage, which is connected with it, increase. Thus, with the increase of the output norm the rates decrease, but due to the increase of labor productivity and the increase of the amount of the bonus the wage also increases in the case of a leading increase of labor productivity.

An additional factor, which stimulates the decrease of the labor intensity by means of the revision of the norms, is the payment of one-time bonuses to the workers for the decrease of the labor intensity. Here the bonus can be advanced at the expense of the saving (up to 50 percent), which was obtained over 3-6 months from the revision of the output norms. Graduated norms with an interval of their assimilation of 0.5 to 3 months are used when assimilating the rated labor intensity of the production of an item (operation) which is new for the given flow. The data on the level of assimilation of the sectorial norms for the production of previously approved models, which are generalized in the sector of the rate setting of labor, are taken as the basis. Much information retrieval material, which includes the

norms of nearly 3,000 technological operations, has been accumulated here. The new norms, which have been approved by the director with the consent of the factory committee of the trade union, are turned over to the sector of rate setting of the technological laboratory for use during the subsequent calculation of the labor expenditures on new items.

The system of the design and technological development of new items, the rate setting of the expenditures of labor on their production, the technical preparation of production, its technical and economic planning and day-to-day management, which is in effect at the factory, ensures the integration and consistent coordination of the actions of the engineering services of the factory on the successful introduction of brigade forms. The engineering basis of their introduction is incorporated in the very system of the development of the new items, the technology of its production with allowance made for the equipment and accessories being used, the planning of production, the organization of material and technical supply, the payment for and material stimulation of labor.

The structure of the central technological laboratory of the factory has been changed. It includes: the model sector with a group of artist-modelers and designer-modelers, a technological sector, a sector of the rate setting of the expenditures of labor, a sector of the rate setting of basic and auxiliary materials, a chemical group, a section for the production of molds and forms and a section for the production of laboratory prototypes.

On the basis of the elaborated time allowances for the production of items and the refined plan of production in physical terms the division of labor and wages determines the labor intensity of the production program for each brigade, which is used for the planning of the number of basic workers, the labor productivity and the wage fund.

Schedules of the production of footwear by models in the quantitative ratios, which ensure the fulfillment of the plan in physical terms and the contracts, are drawn up by the production control division of the factory with allowance made for the items, which have been selected for production, as well as the contracts with trade organizations. Thus, the plans for the shops and flow brigades on the entire range and assortment of items are drawn up.

The concentration of the drafting of all the technical specifications for an item in a single subdivision of the enterprise with allowance made for the norms of the expenditures of labor on its production, on the basis of the planned conditions of the organization of production and its technical equipment, made it possible to develop the engineering support of the introduction of the brigade organization of labor. The key thing of this support is the fact that the output norms and rates are set for items in advanced so that during the entire production period of the manufacture of the products the need for the revision of the norms of labor expenditures would be eliminated.

There is envisaged by the statute on the material stimulation of the engineering and technical personnel of shops the material interest of the indicated category of workers in the increase of the level of assimilation of the labor intensity, which is calculated according to the sectorial standards, which is very important in connection with the changeover to the evaluation of the economic activity of enterprises according to the indicator of the standard net output.

The series-parallel principle of the performance of operations is called for by the system of organizational and technical documents. The order on the start of production of a model of footwear is the final document. It is signed by the chief engineer only when all the operations on the organization of the production of the new item have been completely performed by the services of the factory. The production control division makes the check of the readiness. In case of the violation of the schedule of the performance of engineering operations by a specific service (division) the system of material stimulation in accordance with the comprehensive system of product quality control and EIR automatically comes into action. Those to blame for the upsetting of the deadlines of the performance of the operations are partially or completely deprived of the bonus portion of the wage.

The organizational and technical documents being used also enable the sector of the rate setting of materials to calculate the need for the production program of basic and auxiliary materials, by which the basis is created for the more precise balancing of the needs of production and the plan of material and technical supply. The rate setting of the consumption of auxiliary materials on the basis of an estimate promotes the more economical use of these materials in production as a result of the greater soundness of the rates.

The second copies of the flow sheets (diagrams) and routes of production are delivered to the production flows. These documents perform here an operation-by-operation organizational and technological function of production and the monitoring of the observance of the requirements of the standards and parameters of the technology for the processing and assembly of items of a wide assortment.

In connection with the introduction of the brigade forms of the organization and material stimulation of labor the engineering functions of the line personnel increase. The opportunity to solve more effectively locally the problems of the improvement of the technology and equipment, the organization of production, the increase of the skills of the workers and the improvement of product quality arises for this category of workers. At the same time the changeover to brigade forms did not change substantially the duty regulations, since the brigade flow is the production organizational unit in the structure of the enterprise. The use of the production flow as a brigade made it possible, while retaining the structure of management, to ensure the planning of production and labor, day-to-day management and regulation, accounting and reporting with reference to the brigade forms. The brigade flows, being a cost accounting production unit, have specific cost accounting plan assignments and a set of production indicators, for the fulfillment of which the labor of the collective of workers of the brigade flow is paid for and the payment of bonuses is made in accordance with the prevailing statute on the payment for and material stimulation of labor.

The experience of the factory in the elaboration and use of technically sound norms of labor and the organization of production on a standard basis was approved by a decree of the Ukrainian SSR State Committee for Labor and the Ukrainian SSR Trade Unions Council. It is recommended to the ministries, departments, republic committees and oblast councils of the trade unions to take steps on its use in the national economy.

A comprehensive plan of engineering support, which consists of six sections: the management of production and the organization of labor; the increase of the

technical level of production and the improvement of the technology; the improvement of the forms and methods of the training and further training of the regular labor force; the development of socialist competition and the improvement of its forms, the extensive promotion and introduction of advanced know-how; the backing of the production, everyday and social conditions of labor, has been drafted and is in force at the factory. This plan is coordinated with the passports of the brigades, the deadlines and those responsible for the implementation of the measures are indicated in it. The service of the comprehensive system of product quality control and EIR monitors their implementation. The engineering and technical personnel in conformity with their functional duties are attached to those who are responsible for the implementation of the measures on the creation of normal working conditions of the brigades.

At the factory the study of the peculiarities of the organization of wages and production preceded the introduction of brigade forms of the organization and stimulation of labor. A set of statutes on the brigade organization of the payment for labor with reference to the operating production flows, as well as the subdivisions of ancillary production were drafted as a result of the conducted study of the work of the flows under the conditions of the frequent interchangeability of the list and assortment of products.

The procedure of the collective form of payment and the material stimulation of labor of the workers of the brigade flows with a free rhythm for the end results of work provides for the distribution of the piece-rate wage of the brigade among the workers for the produced output according to piece rates. The bonus portion of the wage of the brigade is distributed in proportion to the piece-rate wage with allowance made for the value of the coefficients of labor participation. The amount of the bonus of the brigade as a percentage of its piece-rate wage depends on the level of assimilation of the total labor intensity, which is calculated in accordance with the sectorial standards and indicators of quality.

A statute on the brigade organization and stimulation of the labor of the workers on conveyor lines with a regulated rhythm has been drafted. The distribution of the piece-rate wage for the end results of the work on a single order in conformity with the rate and the time worked by each worker who is a member of the brigade is envisaged by this statute. The bonus portion of the wage is distributed in accordance with the method which is used for the brigade flows with a free rhythm.

A statute for the auxiliary services of the enterprise has been drafted. The distribution of the bonus portion of the wage with allowance made for the coefficient of labor participation is envisaged by it. The value of the coefficient of labor participation for each brigade member is specified by a decision of the council of the brigade, which is headed by the brigade leader. The basic wage--piece-rate or hourly--is distributed individually.

On the basis of the peculiarities of the work of the brigade flows of small-series shops, which produce especially fashionable footwear, and of brigade flows with a long production cycle and a larger stock of unfinished production, statutes on the brigade organization of the payment for labor have also been drafted for them. Such statutes have also been drafted for such categories of workers as the cutters of the upper and lining, the textile and fur for the parts of footwear, as well as the cutters of the parts of the bottom of footwear and the brigades for the processing of the parts of the bottom in the stamping shop.

The collective form of the material stimulation of labor for the end results of work, which has been introduced at the factory, presumes the consideration of the individual contribution of each worker, on the basis of his skills, the level of individual productivity, the degree of labor activeness and the product quality (its delivery to the technical control division on first presentation), and the distribution of the piece-rate wage of the brigade among the workers in accordance with the piece rates. The amount of the bonus of the brigade for the fulfillment of the plan indicators is determined as a percentage of the piece-rate wage of the brigade. The more the level (coefficient) of assimilation of the total sectorial labor intensity of an item also depends on the coefficient which takes into account the delivery of products on first presentation, the greater the amount of the bonus is as a percentage of the piece-rate wage.

The output of products with a smaller number of workers is stimulated under the conditions of the collective distribution of the bonus portion of the wage in conformity with the value of the coefficient of labor participation and the amount of the piece-rate wage. This, in turn, leads to the considerable exceeding of the prevailing output norms, which objectively requires their increase. The question of the revision of the time allowances (output norms) is extremely complicated and its settlement is made even more complicated under the conditions of the collective forms of the organization of and payment for labor.

The brigade system of the organization of and payment for labor, which is in effect at the enterprise, is making it possible to combine successfully the tasks of increasing productivity efficiency with the interests of the workers in accordance with the assimilation of technically sound norms and to avoid the difficulties which are connected with the revision of the norms and rates, especially when assimilating new items. The system of the payment of bonuses to the workers has been arranged so that the amount of the bonus of the brigade increases in proportion to the increase of the level of assimilation of the sectorial labor intensity.

The use of the system of the material stimulation of brigades for work in accordance with technically sound norms makes it possible to ensure the proper ratio of the growth rates of labor productivity and wages. The advantages of the organization of production on a standard basis, which is in effect at the factory, appear to the greatest extent under the conditions of the use of the brigade forms of the organization and stimulation of labor. The workers assimilate the sectorial output norms and increase labor productivity in a shorter time. For example, in the intermediate product shop during the second half of 1981 with the changeover to the brigade form of the organization of labor in accordance with brigade flows the labor productivity increased by 12 percent and 10 percent of the workers were released. At the same time in similar flows, in which the brigade form was not yet being used, the labor productivity increased by 4.6 percent. The occupational skills of the workers increased, the number of workers combining operations rose. The wages of the workers of the brigades are 7-9 percent greater than those of other workers. The operation of the factory under the conditions of the brigade form of the organization of and payment for labor made it possible to decrease the expenditures of the wage fund per 1,000 rubles of gross output from 149.9 rubles in 1980 to 141.2 rubles in 1981 and the expenditures per ruble of commodity production from 78.98 to 78.56 kopecks as against 84.05 kopecks on the average for the sector. The entire increase of the production volume in 1981 was provided at the factory by the increase of labor productivity.

The preliminary organizational work performed at the factory promoted the introduction of the brigade form of the organization and stimulation of labor. A factorywide commission under the direction of the director was created for this. The leading specialists of the enterprise and the managers of the divisions and services belonged to the commission. Similar commissions were created in the shops of the enterprise. The factorywide commission listens weekly to those responsible for the process of the introduction of the brigade form of the organization and stimulation of labor. All the work on the development of the brigade form of the organization of and payment for labor is constantly under the control of the party and trade union organizations.

The administration and the trade union committee regularly analyze the state of planning, the organization of production, technical rate setting and wages in the brigades. Questions of the introduction of the brigade form of the organization and stimulation of labor are examined at the permanent production conferences and the meetings of the brigades.

Labor passports, in which the plan indicators of the work of the brigade, the socialist obligations and their actual fulfillment are entered, have been introduced for all the brigades. All the brigades work on a cost accounting basis.

The brigade form of the organization and stimulation of labor is being studied in the system of the economic education of the workers of the factory and at the schools of communist labor and is being covered extensively in the factory newpaper and on the radio.

Odessa Transportation Enterprises

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[Article by Candidate of Economic Science Yu. Kulikov and Z. Radovil'skiy (Odessa): "The Improvement of the Brigade Form of the Organization and Stimulation of Labor"]

[Text] The need for the implementation of measures on the further dissemination and increase of the effectiveness of the brigade form of the organization and stimulation of labor is emphasized in the decisions of the 26th CPSU Congress and decrees of the party and government. The development of this form is inseparably connected with the solution of two national economic problems. The first problem consists in the gradual preparation of production for the use everywhere of the brigade form and its emergence as the main form. The second problem consists in the increase of the level of social development of labor collectives and the increase of the influence of advanced collective forms of the organization of labor on its productivity and production efficiency.

At transportation enterprises the brigade form of the organization of labor (in contrast to the other sectors of the national economy) has traditionally been predominant. Thus, whereas in industry at the beginning of 1982 about 55 percent of the workers were covered by the brigade form of the organization and stimulation of labor, at the seaports more than 93 percent of the total number of workers worked in brigades. At railroad freight stations about two-thirds of the workers

of the mechanized divisions of loading and unloading work are covered by collective forms of the organization of labor.

Following the promulgation of the decree of the CPSU Central Committee and the USSR Council of Ministers on the improvement of the economic mechanism the brigade form of the organization and stimulation of labor underwent further development in transportation. The materials of the studies conducted at enterprises of various types of transport of Odessa Oblast, in particular, attest to this. Thus, during 1979-1981 the level of coverage by the brigade form of the organization of labor in loading and unloading work at the Odessa Port increased by 5.7 percent and at the beginning of 1982 came to 93.3 percent. At the railroad stations of the Odessa Department of the railroad during this period the number of workers in the brigades, which carry out loading and unloading from railroad cars and trucks, increased by 12 percent. The coverage of drivers of the Oblast Administration of Truck Transport by the brigade form of the organization of labor came to 73.2 percent, which is 15 percent greater than in 1978.

The number of consolidated multiple-skill brigades is increasing from year to year. This is attributable to the appearance in transport of new rolling stock and highly productive lifting machines, the adoption of advanced technological processes, the need to increase the rate of the handling of vehicles and to shorten the time of their layover, the increase of the level of mechanization of loading and unloading work. Under these conditions great coordination and synchronism in the handling of freight and the rolling stock and flexibility in the shifting of people and equipment are required. The output in consolidated multiple-skill brigades in loading and unloading work at seaports and railroad stations on the average is 10-15 percent higher than in ordinary brigades. By means of the development of this advanced collective form of the organization of labor at the Ilichevsk Port alone in 1981 as compared with 1980 the rate of freight operations increased by 127 tons/ship-day, while the anchorage time of one ship was shortened as compared with the standard amount by 12.2 percent. The introduction of consolidated multiple-skill brigades is promoting the solution of a number of social questions of labor activity. The labor and creative activeness of the workers and their skills are increasing, the efficiency is increasing. For example, as of the beginning of 1982 the average class of skill in the consolidated multiple-skill brigades of the Izmail Seaport was 6.3 percent higher than in ordinary multiple-skill brigades, while in the mechanized division of loading and unloading work of the Odessa Department of the railroad it was 10.2 percent higher. The experience of the Izmail Seaport, at which at the end of 1980 a cost accounting multistage consolidated multiple-skill brigade, which covered the entire work front of the second region of the port, was created, is interesting. It consists of 4 interchangeable links with up to 50 people in each. The brigade works on a single order and is interested in the end results of its labor--the fulfillment of the amount of loading and unloading work, which is planned for it, and the shortening of the time of the processing of ships and railroad cars, the efficient use of manpower and material resources. In 1981 the labor productivity in this brigade was 12.7 percent higher than in the other primary collectives of the port. By means of the introduction of cost accounting in the brigade the layovers of rolling stock per 1,000 tons of handled freight were shortened by 31.3 percent.

The contract method of the work of brigades during the processing of ships has become considerably widespread at the Odessa Seaport. Its peculiarity is the short

period of the conclusion of the contract (from several hours to several days). Ships with general and bulk cargo, as well as containers are processed in accordance with this method. If in one brigade there are not enough docker-machine operators for the round-the-clock processing of a ship with the set intensity, several brigades are combined into a single collective with payment according to the end results of labor and a single order. The efficiency of the work of brigades of docker-machine operators in accordance with the brigade contract method in many ways depends on the related workers of the portside railroad station, who carry out the delivery and removal of railroad cars. Their untimely and irregular delivery causes disruptions in the processing of ships and idle times of the workers and handling equipment. In this connection the need arises to expand the framework of the brigade contract and to coordinate the labor activity of the workers of the station more completely with the work of the brigades of docker-machine operators. This idea was realized during the processing of means of transportation by the method of the comprehensive brigade contract, which was used for the first time at the Odessa Port in 1978. The contract, which is concluded between the administration of the port, the brigade of docker-machine operators and the workers of the railroad station, is its basis. There are parties to the comprehensive brigade contract: on the part of the seaport--the consolidated multiple-skill brigade, on the part of the railroad station--the switch controllers, the inspectors of the cars, the train make-up men, the engine drivers, the freight receivers and the train receivers. The drafting by the port and the station of the optimum technical schedule plan of the processing of the ships, the supply of the necessary amount of transfer equipment and cars and the determination of a sound occupational job and numerical composition of the performers and the system of their stimulation for the fulfillment of the assumed obligations precede the changeover of related collectives to this advanced method of the organization of labor. The results of the processing of ships by the method of the comprehensive brigade contract show its great effectiveness. Thus, in 1981 more than 11 percent of all the ships were processed by it. Here the labor intensity of the cargo operations was reduced by 55,000 man-hours, the saving of material resources of the port came to about 6,000 rubles, while the layover time of the ships was reduced as compared with the standard layover time by more than 15 percent.

The use of this advanced method of the organization of collective labor in the Odessa Oblast Administration of Truck Transport made it possible to increase the placement of trucks into service, to increase the output per registered truck ton and the labor productivity of the drivers, to decrease the expenditures of resources and to increase the collective and individual responsibility and interest of the workers in the end results of the labor of the brigade. Thus, in 1981 due to the changeover to the brigade contract of 6 brigades at the truck transport administration 7 people were conditionally released, while the saving of manpower and material resources came to more than 20,000 rubles.

At the same time, the conducted studies showed that the brigade contract has not yet received adequate dissemination in all types of transport. In particular, it is practically not being introduced in the mechanized divisions of loading and unloading work in rail transport. This is connected with the fact that at these enterprises they do not wish to agree to the rearrangement of the existing organization and stimulation of labor, the system of planning and the evaluation of the results of the work of the primary collectives. Moreover, to date sectorial

procedural statutes on the brigade contract in the mechanized divisions in rail transport have not been drawn up.

Untapped reserves in the development of cost accounting brigades also exist in maritime transport. The main one of them is the stabilization of the freight traffic according to volume and time and the specialization of the cargo zones of operations according to the technology of their performance and the types of cargo.

The use of an advanced procedure of the payment for labor and the payment of bonuses for it, which takes into account the individual contribution of each worker to the end result of the work of the collective, is an important direction of the improvement of the brigade form of the organization and stimulation of labor at the enterprises of transportation centers. This is connected with the use of coefficients of labor participation, the procedure of the determination and use of which is established at the general meeting of the brigade and is approved by the manager of the transportation enterprise with the agreement of the trade union committee. At present such coefficients have been established for the docker-machine operators of the Odessa Seaport. The extra piece-rate earnings and the bonus are distributed according to them. Here the average coefficient of labor participation is taken to be equal to 1, and, moreover, indicators, which increase and decrease it, are established.

The study of the experience of the work of brigades at the enterprises of transportation centers shows that the conditions of the performance of operations and the management of production still do not meet everywhere the requirements of the improvement of the brigade form of the organization and stimulation of labor. This is responsible in a number of instances for the long intrashift and full-shift idle times of the workers and the significant level of the turnover and leads to an increase of the layover of rolling stock at junctions. Thus, in 1981 the idle times of the docker-machine operators at the Odessa Seaport came to more than 5 days per worker, the level of the turnover exceeded 24 percent. Moreover, about 30 ships and more than 5,600 railroad cars were processed with an above-standard layover. The existence of the indicated shortcomings is explained, first of all, by the unsound approach to the determination of the numerical and occupational skills composition of the brigades in connection with their consolidation, to the management of the primary labor collectives and to the elaboration of the functional duties and the system of the training and increase of the skills of brigade leaders.

As was noted above, the consolidated collectives have advantages as compared with ordinary brigades. However, the hourly output, the level of interrelations and, as a consequence, the overall satisfaction with work in very large collectives are beginning to decrease. After a certain limit the decrease of the other indicators of the basic activity, including the monthly labor productivity, is also observed. Hence follows the conclusion that the "megalomania" in the development of brigades does harm, since functions of day-to-day management, including planning, the organization of operations and the monitoring of their fulfillment, are automatically assigned to the brigade. The indicated circumstances require the establishment of specific guidelines of the maximum number when forming brigades.

In spite of the increase in recent years of the number of workers covered by consolidated brigades, collectives with fewer than five people are still very widespread in transportation. In such small brigades it is hardly possible to use the

advantages of the collective form of the organization of labor. Their consolidation improves the planning and organization of operations and creates the conditions for the increase of skills. The need to seek the advisable limits of not only the maximum, but also the minimum size of a brigade follows from this.

Usually when calculating the numerical composition of collectives experienced workers proceed from the average statistical data, which characterize the average volume of cargo being handled, the average number of ships, railroad cars or trucks, which have been delivered for processing during a specific period of time. Here it is arbitrarily believed that the transportation flow is determinant, that is, is constant in magnitude over any equal intervals of time, and does not depend on the moments of the arrival of means of transportation.

In reality the incoming transportation flows are of a probabilistic nature, which substantially influences the choice of the versions of the organization of labor and the size of the brigade. Thus, the increase during specific periods of the number of vehicles and amount of freight, which arrive at a junction, as compared with their average values, causes additional idle times of the rolling stock in the process of the loading and unloading of the freight and upsets the fulfillment of the plan assignments on its handling. And, on the contrary, the decrease of the flow of vehicles and freight increases the intrashift idle times of the brigades of docker-machine operators and the transfer equipment.

Thus, the optimization of the numerical composition of brigades subject to the incoming flows of rolling stock is one of the basic directions of the improvement of the brigade form of the organization of labor. Here, in our opinion, the minimum total expenditures, which are connected with the use of workers and transfer equipment, as well as the minimum costs due to the idle time of rolling stock should be the criterion of optimization.

An important thing in the management of the brigade is the assurance in it of the appropriate level of skills of the workers. It should ensure the reliability of the working of the brigade under different production conditions and the interchangeability of its members. As the same time, as practical experience shows, in a number of collectives it is unjustifiably high, which leads to an increase of the expenditures on the training of specialists, in others it is too low, which adversely influences the effectiveness of the work of the collective.

Practical experience shows that for the normal management of a brigade at the enterprises of transportation centers it is necessary to specify properly the status of its manager, the functions, rights and responsibility of the brigade leader, his role and place in the mechanism of management and interrelations with the other workers, primarily with the foreman. The manager of the brigade is given considerable rights in the management of the primary collective and its material and technical supply. Here in a number of consolidated multiple-skill brigades with 100 workers and more the brigade leader spends on these operations 50-80 percent of his shift working time, while not being freed from his basic job. In such brigades many functions of the foreman are turned over to the brigade leader, and the former frequently is responsible for the work of a collective which is smaller than a brigade. It seems to us that the foreman at the enterprises of transportation centers under the conditions of the development of the brigade form of the organization of labor as in the past remains the main figure. The brigade leader cannot

assume a number of functions of a purely technical and technological nature (for example, the correct stowing of cargo in the hold). In connection with the transfer of a portion of his functions to the brigade leader many new opportunities arise for the foreman in the operational organization and planning of loading and unloading operations.

The selection of brigade leaders and the organization of the planned increase of their skills are of great importance for the assurance of the successful work of the brigade. The brigade leader today is a worker, an organizer and an educator. He needs diverse knowledge and skills and a specialized vocational education. At the same time, at the enterprises of transportation centers there are no specially drawn up programs on the selection and training of brigade leaders. Moreover, the possibilities of the increase of the skills of brigade leaders and their creative growth are not being fully utilized, since the occupational advancement of the manager of the brigade is limited to the awarding to him of class I (the highest), which has been established for ordinary workers.

In our opinion, the corresponding transportation ministries need to draw up and introduce standard programs on the selection, training and increase of the skills of brigade leaders. The possibilities of the occupational advancement of brigade leaders and the awarding to them of special classes of skills like "brigade leader of class I," "brigade leader of class II" or, for example, "brigade leader-foreman," with the corresponding additional payment for the increase of the class of the brigade leader, should be stipulated in the statutes.

The suggestions stated above reflect the needs of the development of the brigade form of the organization and stimulation of labor in transportation. Their implementation can promote the accomplishment of the tasks set by the 26th CPSU Congress for transport workers.

Coefficients of Labor Participation

Kiev EKONOMIKA SOVETSKOY UKRAINY in Russian No 11, Nov 82 pp 61-66

[Article by Candidate of Economic Sciences N. Zavadovskiy: "The Refinement of the Coefficients of Labor Participation of the Members of Multiple-Skill Brigades"]

[Text] It is necessary to establish precisely, what portion of the collectively produced output should be assigned to the services of one worker or another. This will make it possible, first, to carry out the objective stimulation of workers and, second, to attach the performers primarily to those operations in which they do the best.

One of the conditions of the harmonious work of the members of multiple-skill brigades is their interchangeability in the operations being performed. Some brigades have been working in an unchanged composition for a number of years now and the original occupations of the workers to a considerable extent have been leveled. Each of them can work at different workplaces and perform a number of operations. At the same time, the assurance of interchangeability does not mean that every worker does equally well in any operation. The results of collective labor depend to a considerable extent on the placement of the members of the brigade.

During the improvement of the organization of the brigade contract it was necessary not only to demarcate the proportionate contributions of the members of the brigades to the results of their labor, but also to eliminate extraneous influences. What has already been done? The experience of the initiators has been generalized, adjustments have been made in the original conditions of the work of brigades on a single order. The USSR State Committee for Labor and Social Problems and the Secretariat of the AUCCTU in 1980-1981 approved the most important materials on the issues in question: the model statute on the production brigade, the brigade leader, the council of the brigade and the council of brigade leaders; recommendations on the development of the brigade form of the organization and stimulation of the labor of workers at machine building and metalworking enterprises; the procedural principles of the brigade form of the organization and stimulation of labor in industry.

The last of the mentioned materials includes a number of paragraphs which are aimed at the consideration of the individual labor productivity and the quality of the work being performed. The tentative factors of the increase or decrease of the coefficient of labor participation of workers are enumerated in Paragraph 6.8. Paragraphs 6.9 and 6.10 suggest several versions of the quantitative expression of the coefficient of labor participation. The procedure of using the coefficient, which is introduced "by the managers of the enterprise with the agreement of the trade union committee with the active participation of the councils of brigade leaders...,' is set forth from Paragraph 6.11 and below.

The determination of the labor participation of workers is now carried out in the following sequence: the recording of the amount of labor expenditures and the nature of the work being performed; the introduction of qualitative corrections (the consideration of social activeness, the performance of organizing functions and so forth); the establishment of the coefficient of labor participation (at the meetings of the councils of brigades or at the meetings of the workers).

The coefficient of labor participation has begun to be used, for example, in such modified versions of the statements for the crediting of wages:

Surname, name, patronymic of workers	Time worked, hours	Hourly wage rate, kopecks	Base pay for time worked, rubles (column 1 X column 2)	Coefficient of labor participation	Calculated wage according to coefficient of labor participation, rubles (column 3 X column 4)	Additional payments, bonuses and others, rubles	Amount due, rubles (column 5 + column 6)
A	1	2	3	4	5	6	7

The preliminary (initial) value of the coefficient of labor participation now is arbitrarily taken to be equal to 1. Intuitive corrections, which increase or decrease its initial value subject to the nature of the activity of a worker, are introduced when establishing the final value of the coefficient. Most often the coefficient remains equal to 1, which indicates its neutrality, its inadequate popularity.

The use of the coefficient of labor participation has been officially endorsed. An unobtrusive, but key element is missing--objectivity, the designed validity in the determination of the value of the coefficient. The accomplishment of the task of establishing the services of the members of the brigade for the present intuitively "is made to fit the response," while the extraneous influences are not being eliminated at all. It is conventionally presumed that the production by the brigade of a specific product is attributed entirely to its achievements. References to the influence of related industries appear only in the case of production disruptions.

The correctness of the coefficient of labor participation at present is determined by vote. Such an approach is democratic, but inadequately convincing. No one would bring himself to claim that the increase of the coefficient now conforms to the actual increase of the individual contribution to the common results. The variability of the coefficient of labor participation is not correlated with the material transformations and is devoid, therefore, of a specific economic content. By how many units of products will the output increase due to the assimilation of new equipment and the scientific organization of labor? By how many units of products will the output decrease due to the failure to observe production and labor discipline? All these corrections are hypothetical, since in reality the influence of the factors appears in combination. In this matter the summary verification of the actual labor efficiency, and not a priori assumptions about the influence of all kinds of factors on the coefficient of labor participation, is necessary.

The attention of economists, sociologists and psychologists has gradually been focused on the identification of the individual services of the members of the multiple-skill brigades. The level of fulfillment of the plan assignments, the turnover of personnel, the occurrence of conflict situations--all these phenomena are closely connected with the nature of the evaluation of the contribution of individual workers to the common achievements. If it is a question of "participation," one should not increase the conventional coefficient of labor participation, which is equal to 1, by the hypothetical corrections, but should break the unit (100 percent) of the common achievements down into the individual components, the fractions of the unit.

Such problems traditionally are not posed by elementary methods. However, the existing uncertainties and contradictions in the establishment of the coefficient of labor participation are such a burden on the workers of enterprises that now many of them welcome the use of objective calculation methods, even though they are complicated.

Let us examine one of the synthetic systems, which provides for the use of matematical statistics and computers.

The mechanical attribution of portions of the produced output to the services of a specific member of the brigade in the case of widespread interchangeability makes no sense. Hence the impossibility of using traditional methods for the rate setting of the labor of the performers who are working on a single order. It becomes clear that in the absence of the possibility to study the dynamics of the whole (the products of the brigade) according to the nature of the physical increase of its parts (the individual output of each worker) the methods of measuring the influence of the differentiated expenditures (X_i) on the integrated results (Y) should

be used. If the placement and workload of the workers are close to the optimum, the influence of the labor expenditures on the increase of products increases.

Where does one obtain the initial data which are necessary for such an analysis? How does one in practice carry out the measurement, and then the regulation of these interactions?

Photographic time studies of the brigade leader or another organizer of the activity of the brigade make it possible to establish the labor expenditures of each worker with a breakdown by operations. At times it is possible to replace continuous observations with instantaneous observations, as well as to confide the establishment of the nature of a job to the performers themselves. In such cases the technical means of studying labor processes, especially television equipment, are very useful. The data of records management will show the dynamics of the production of output. It remains to identify the trend of the cause-effect relationship between the variation of the labor expenditures (X_i) and the output (Y) over a specific space and time spectrum.

For the assurance of clarity in the presentation to experience workers of the new synthetic system it was necessary to make trial calculations under the conditions of a specific works. The multiple-skill brigade of one of the metalworking enterprises of Kiev was taken as the object of the study. It produces an item made from a steel rod, which undergoes machining on a lathe and manual bending to a template. This brigade is small, while the operations performed by it are elementary. But even brigades of a large size, which perform a more extensive range of operations, will not require the performance of extra calculating and analytical procedures. The proposed method in principle is universal. Only the time for the preparation of information and the computer solution of the problems may change.

The multiple-skill brigade being studied by us consists of the three workers A, B and C. For the production of the product they need to carry out operation I (the machining of the rod in five passes on a DIP-200 general-purpose lathe with an extended bed) and operation II (the manual bending of the rod to a template, which is mounted on a special stand). The workers periodically replace each other, but the actual efficiency of each of them with a breakdown by operations has not been precisely determined. We have to express quantitatively:

the influence of the labor of each of the three workers A, B and C on the dynamics of the volume of the jointly produced products which a breakdown by operations I and II;

the influence on the production of products of other factors which are not due to the current labor expenditures of the members of the multiple-skill brigade;

the tentative value of the coefficient of labor participation of each worker;

the value of the qualitative corrections;

the final value of the coefficient of labor participation of each worker;

the total of the wages due to workers A, B and C for the period under review;

the number of the operation, in which one brigade member or another should primarily work during the planning period for the purpose of improving the results of joint activity.

For the measurement of the influence of the individual labor expenditures on the dynamics of the production of products let us make use of a matrix of the initial data (Table 1), which was formed on the basis of photographic time studies and the materials of records management. The labor expenditures are reflected by the worked man-hours, while the volume of produced output is reflected by physical indicators (the number of units).

Table 1

Breakdown of the Labor Expenditures and the Results of the Work of the Brigade by Days of the Month

Workdays of the month	Volume of output produced by brigade, Y	Labor expenditures of brigade members, X_i					
		Worker A		Worker B		Worker C	
		operation I	operation II	operation I	operation II	operation I	operation II
		X_1	X_2	X_3	X_4	X_5	X_6
1	2	3	4	5	6	7	8
1	24	8	0	7	1	0	8
2	17	4	4	3	5	7	1
3	19	4	4	2	0	0	8
25	22	3	5	2	6	5	3

What is the efficiency of some man-hours or others (X_i)? Where is the proof that individual workers on some days do not "knock out" the set 8 hours at the enterprise? The visual evaluation of Table 1 is not capable of giving an answer to these questions. It is possible to note that during the first workday of the month, which is characterized by a high general brigade output (24), workers A and B primarily performed operation A, while worker C performed operation II. However, on the last workday of the month the brigade also produced a considerable amount of output (22), although the breakdown of the labor expenditures in this case is completely different. It becomes clear that separately taken cases do not reveal the regularities. It is necessary to project the labor expenditures (X_i) mathematically onto the common results (Y) and to give a quantitative expression of the relationship of these indicators.

The technology of multifactor calculations on a computer includes the processing of the initial, intermediate and final matrices of the base data. The evaluation of the expediency of including some indicators or others in the subsequent stages of the analysis is made during the study of the initial matrix. The elimination of some values due to the lack of conformity of the estimated values to the standard criteria can occur in the case of the sequential processing of the intermediate matrices. The "pure" influence of the remaining factors is established on the basis of the analysis of the final matrix.

The multifactor calculations as a result yield the correlation and regression coefficients. But the validity of these calculations should initially be substantiated by the analysis of the distribution of the values in the statistical series being processed. After obtaining the correlation and regression coefficients it is necessary to prove their significance and reliability. The performance of the corresponding cycles is envisaged by the algorithms and programs. Programmers, the suppliers of the problems and the operators carry out the calculating and analytical procedures, while it is sufficient for economic managers to know the general content of the multifactor analysis and to learn to use the interpretations of the computer solutions.

The solution of the sets of equations on the basis of the matrices of the base data with the sequential shift of the series of X_i with respect to the series of Y (for the establishment of the lag of the influence) made it possible to calculate the trend of the sought dependences. On the basis of the example of a model with a linear relationship of the parameters this trend was expressed by the following regression equation:

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_6,$$

$$20 = 13 + 0.5 \times 4 + 0.1 \times 4 + 0.3 \times 5 + 0.2 \times 3 - 0.25 \times 2 + 0.5 \times 6,$$

where Y (20) is a function (the volume of output produced by the brigade on the average in a day); X_1 (2), X_2 (4), X_3 (5), X_4 (3), X_5 (2) and X_6 (6) are independent variables (the breakdown of the labor expenditures of workers A, B and C on the performance of operations I and II on the average by days of the month); a_1 (0.5), a_2 (0.1), a_3 (0.3), a_4 (0.2), a_5 (-0.25) and a_6 (0.5) are the regression coefficients, which show by how many of its units of measurement the function changes in the case of a change of the corresponding independent variable for one of its units of measurement; a_0 (13) is a free term of the regression (the eliminated value of the basic conditions of the relationship between X_i and Y and, in the interpretation of some authors, the entire set of other influences on the function, which complement it up to the actual value).

After making the multifactor calculations the influence of the labor of each of the three workers on the dynamics of the volume of the jointly produced output with a breakdown by operations I and II is expressed by combinations of the parameters of the regression equation. Under some assumptions these combinations are regarded as characteristics of the individual contribution of the performers to the collective achievements.

All the estimated mathematical and statistical parameters correspond to standard (normative) constraints. The interpretation of the regression equation leads to the following practical conclusions. Worker A by the influence of his labor promotes the contribution to the general brigade output in operation I of 2.0 (0.5×4) units of the volume of output, in operation II--0.4 (0.1×4) unit, and in all on the average in a day--2.4 units ($2.0 + 0.4$). Worker B when performing operation I promotes the increase of the general brigade output by 1.5 (0.3×5) units of the volume of output, operation II--0.6 (0.2×3) unit, and on the average in a day--2.1 units ($1.5 + 0.6$). Worker C when performing operation I decreases the brigade output by (minus!) 0.5 (-0.25×2) unit of the volume of output, when performing

operation II he promotes an increase of the output by 3.0 (0.5 X 6) units, while on the average in a day provides 2.5 units (-0.5 + 3.0).

On the average during the workday of the month being considered the brigade turned over to the technical control division and subsequent conversions 20 units of output. But only seven units were provided by the current influence of the labor expenditures of the collective of the brigade. The remaining 13 units are a result of other factors (a_0).

In the case of such a calculation of the coefficients of labor participation the influence of the other factors is eliminated. The breakdown of the collective achievements into components in this case should be limited to the framework of the seven units of the general brigade output. Subsequently it is necessary to see to it that the share of one's own services in the production of the output would increase.

Simple calculations make it possible to establish that now worker A has 34.40 percent of the credit in the general brigade output ([2.4/7] X 100), worker B--30.00 percent ([2.1/7] X 100), worker C--35.70 percent ([2.5/7] X 100). When expressing the credit in fractions of 1 the notation will assume the following form: worker A--0.343, worker B--0.300, worker C--0.357. These values are the tentative value of the coefficients of labor participation of each worker.

The difference in the labor efficiency of the members of the multiple-skill brigade attracts attention to the occupational level of the workers. It turns out that worker A, for example, is working only for the second month within the brigade and has not yet acquired the necessary skills. Worker B is the brigade leader and diverts his attention to the performance of organizational functions (as is evident from Table 1, on the third workday of the month he worked directly in production operations only 2 hours during the shift). Worker C in labor efficiency exceeds the results of the activity of his colleagues, he is the tutor of worker A, but is not loaded down with organizational functions on the scale of the brigade.

It is clear that for the more objective evaluation of the services of each member of the brigade quantitative corrections should be made in the tentative value of the coefficients of labor participation. Multiple-skill brigades have already gained some experience in this matter. It is possible to recommend the establishment of the following correction factors: for brigade leaders--1.30, for deputy brigade leaders (in large collectives) and the tutors of young workers--1.15 and so on. These factors are intended only for the adjustment of the initial value of the coefficients of labor participation and do not replaced the other officially established additional payments. At some works (particularly on fishing ships) such adjustments have the form of a share.

In our example the coefficients of labor participation of worker B (the brigade leader) and worker C (the tutor of worker A) are subject to adjustment. Of course, the coefficient of worker A is reduced by the amount of the increase of the coefficients of these two workers. This procedure, which is detrimental to worker A, has the following basis: the tentative value of his coefficient of labor participation (0.343) is ensured with the participation of the brigade leader and the tutor, whose role should be reflected not only in the moral satisfaction, but also

in the material compensation. The compensation of the functions of the brigade leader is assigned in equal factions (0.15 each) to workers A and C.

For the calculation of the final value of the coefficient of labor participation of each worker let us use the correction factors and take into account the changes due to them. The proportionate participation of worker B (the brigade leader) will be expressed by the value 0.390 (0.300 X 1.30), worker C (the tutor)--by the value 0.366 (0.357 X 1.15) - (0.300 X 0.15), and the new worker A--by the value 0.244 (1.00 - 0.390 - 0.336).

The fulfillment of the contract presumes the payment to the brigade of 700 rubles during the month being considered. For the determination of the amount of wages, which are due to each worker, let us use the final values of the coefficients of labor participation. In the example in question 170.8 rubles (700 X 0.244) are due to worker A, 273.0 rubles (700 X 0.390) to worker B and 256.2 rubles (700 X 0.366) to worker C. Worker B, moreover, retains the right to receive additional payments for the performance of the functions of the brigade leader (if such additional payments have been established), worker B can be additionally rewarded for success in tutorship and so on. But these assets are not connected with the distribution of the pooled income of the brigade for the single order.

Having completed the measuring procedures with respect to the results of the work of the brigade during the period under review, we should think out the best arrangement of the workers during the planning period. The already made calculations of the influence of the labor expenditures of each performer (with a breakdown by the operations being performed) on the collective achievements will help us in this.

Worker C achieved the highest individual output. But it all falls to operation II. In operation I this worker works to the detriment of the brigade (here individual qualities: many years of specialization in a specific set of movements, age changes in the state of vision, quickness of reaction and so forth, can influence the errors of the experienced performer). Consequently, for the benefit of the common cause during the planning period it is desirable for worker C to work primarily in operation II. (He himself also gravitates toward such a specialization and worked in operation I during the month under review only 25 percent of the time.)

Worker A already with the first months displayed an aptitude for work in operation I. As is evident from the regression equation, he is trained for lathe work and in this operation the influence of his labor expenditures on the collective achievements exceeds by fivefold the same characteristic in operation II, which requires metalworking skills.

Worker B, who performed the functions of the brigade leader, found the optimum distribution of his labor expenditures in both operations. This is confirmed by the ratio of the parameters of the regression equation.

Thus, during the planning period it is expedient to specialize worker C in the performance of operation II and worker A--in operation I. If it is possible to achieve these plan outlines, the general brigade output will increase by 3.1 units of products:

$$(0.5 \times 8 + 0.1 \times 0 - 0.25 \times 0 + 0.5 \times 8) - (0.5 \times 4 + 0.1 \times 4 - 0.25 \times 2 + 0.5 \times 6) = 3.1$$

The refinement of the coefficients of labor participant is, thus, of practical benefit to production both due to the objective stimulation of the labor of the members of multiple-skill brigades and by means of the optimization of the arrangement and workload. Owing to this portion of the organizational reserves of the intensification of production alone it is possible to increase the volume of output, which is due to the labor expenditures of the members of the brigade in question, by 44 percent ([3.1/7] X 100). The rate setting of labor, the drafting of personal plans and the identification of the winners in the socialist competition are simplified.

A final question remains: Who will engage in this important calculating and analytical work? It seems advisable to introduce the following sequence of procedures:

after the month under review the brigade leaders of the multiple-skill brigades fill out the columns of the matrix of initial data, which characterize the distribution of the labor expenditures (columns 3-8 of Table 1) and turn this document over to the technical control division or the production control division;

the workers of the technical control division or the production control division fill out the columns of the matrix of initial data, which characterize the volume of output produced by the brigade (column 2 of Table 1) and turn this document over to the computer center of the enterprise, association or ministry;

the workers of the computer center make a multifactor analysis in accordance with a standard program and turn over to the brigade leaders the interpretation of the computer solution according to the form of Table 2;

Table 2

Interpretation of the Calculations of the Influence of the Labor Expenditures of the Brigade on the Results of Its Work

Addressing	Function, Y	Free term of regression, a_0	Regression coefficients, a_i	Independent variables, X_i
Overall parameters	29	13		
Worker A:				
in operation I			0.5	4
in operation II			0.1	4
Worker B:				
in operation I			0.3	5
in operation II			0.2	3
Worker C:				
in operation I			-0.25	2
in operation II			0.5	6

the brigade leaders or other organizers of the activity of the multiple-skill brigades make the subsequent calculations according to the scheme set forth in this publication, report to the meeting of workers the final data according to the form of Table 3 and implement practical measures on the objective stimulation and optimum placement of the members of each brigade.

Table 3

Information on the Wages of the Members of Multiple-Skill Brigade No 2 of the Shop of Special Equipment for the Fulfillment of Common Order 184/so for the Amount of 700 Rubles in February 1982

Brigade members	Coefficient of labor participation	Amount due, rubles
Worker A	0.244	170.8
Worker B	0.390	273.0
Worker C	0.366	256.2

If the actual proportionate contribution of a worker with respect to all the operations performed by him is negligible or is entirely absent, the corresponding calculations should envisage the need for additional payments to the wage rates or the minimum wage. At times the absence of a significant relationship between the labor expenditures of some worker and the end result of the activity of the brigade can occur for reasons of a computing nature (for example, the distribution of the values of the statistical series does not meet the requirements of the standard criteria). In such instances, to avoid the groundless reduction of the wage of the worker, it is expedient to be guided by the average wage in the brigade.

The initiators of the introduction of the new method of refining the individual labor efficiency should not conceal the fact that the range of the values of the mathematical statistical parameters and criteria do not make it possible to eliminate absolutely calculation errors. But the scatter of these errors obeys the laws of probability and in the bulk of the cases in practice does not give unjustified advantages to any of the members of the collective.

Simplifications exist in the given examples. But the fundamental possibility and expediency of such calculating and analytical work do not raise doubts. The purposeful readdressing of resources and the optimum combination of factors with allowance made for the nonequivalence of their influence on the results of collective labor will make it possible to put to use the additional reserves of the intensification of production, beginning with its basic units--the multiple-skill brigades.

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GOSPLAN ECONOMIST ADVOCATES ECONOMIC REORIENTATION

Moscow LITERATURNAYA GAZETA in Russian 2 Feb 83 p 13

[Survey by Prof V. Kostakov, doctor of economic sciences and head of a department of the USSR Gosplan Scientific Research Economic Institute, of readers' letters: "Who Is Punishing Whom?"]

[Text] We publish the first survey of readers' replies to the LITERATURNAYA GAZETA poll carried in issue No 50 for 1982 and No 1 of this year.

We would recall that the readers were asked, inter alia, the following two questions: "How, in your opinion, is the problem of strengthening discipline and responsibility at all levels of the economy connected with an improvement in planning, management, the economic mechanism, the organization of labor and production and with the material and moral incentive system?" and "Are the measures provided for by current legislation for combating absenteeism, slackers and violators of labor and production discipline sufficient, in your view? Do you believe it necessary to develop additional measures and which precisely?" Today's survey is devoted to an analysis of the replies to these two questions. [Photo caption: (not reproduced) Topical word for the Five Year Plan: Discipline].

Features of the Phenomena

The spread of the letters in terms of geography, age of the authors and their professional and social position is very great--thanks to this, the mail paints a relatively broad panorama of life.

"From an advantage, planning frequently becomes an impediment: notorious shortages, unbalanced plans--production arrhythmia. Whence breakdowns in all forms of discipline: state, production and labor" (V. Popov, war and labor veteran, Stupino, Moscow Oblast).

"We have all grown up in a single society, but over the years some of us have become nurses and others mischievous chronic young simpletons whom we nurse" (G. Kosnikov, doctor, Shuya).

"Violations of production discipline anger me more than anything: nonfulfillment of contractual commitments by suppliers and the lack of preservation of physical assets in transport. The railroad regulations protect the culprits. Complaints and action brought in arbitration are not settled in favor of the consignees. The regulations absolve the violators of production discipline of liability" (Yu. Mazunin, Brezhnev).

Having described a specific situation, the readers sometimes emphasized that such phenomena are typical. Are they right? How would I myself write if, say, I was entrusted with compiling a memorandum for the Gosplan on the state of labor discipline? I would probably begin thus: breaches of discipline, that is, individual workers' and whole production subdivisions' nonperformance of the duties assigned them, have become more frequent in recent years.

Social labor productivity in the period 1966-1970 increased by an average of 6.8 percent annually, in the next 5 years 4.6 percent, in the following 5-year plan just over 3 percent and in 1981 by 2.5 percent. There is every reason to consider the downward curve formed by these indicators a graphic expression of the fact of a definite decline in the level of discipline.

Discipline, according to the dictionary, is subordination to the established order obligatory for all members of any group. When the violations are of a local, isolated nature, it is not difficult to catch and punish the violator: he stands out sharply against the background of general order as one in ordinary step within a marching column stands out. But does it not sometimes happen that he who persistently continues to march in step appears odd, comical and behind the times to the person who has adapted to maneuvering adroitly and working "for himself" and not for society? Honesty, organization and diligence seem to him a manifestation of feebleness--you do not know how to live, my dear fellows!

"Earlier the dealer was derided as a scoundrel, but now it is sometimes said that he knows how to live. And the honest person could be considered stupid. The waster, and he is usually a bawler, often gets more than the worker" (V. Kryuchkov, Togliatti).

That the problem of strengthening discipline and responsibility is connected with an improvement in planning, management, the economic mechanism and the organization of labor and production and with material and moral incentive is mentioned in many letters. The self-evident nature of this even irritates some people. "This is a standard question. Of course, everything is 100-percent connected" (O. Rybalichik, Moscow). But what are these interconnections? Which of them have weakened and for what reason? And how to rectify the situation?

Test of 'Exactingness'

In the opinion of many readers, the guarantee of order lies in increased exactingness toward labor results and their volume and quality and observance of the schedule.

"Where there is an exacting and decent manager and production is excellently organized, there is strong labor discipline, as a rule" (N. Palash, Belgorod).

If this thought reflects reality, the task is simplified. Test the managers for "exactingness": keep those able to control the collective and replace the ditherers and dawdlers.

But is everything this simple?

The Muscovite V. Medvedev (engineer) recalls: "I joined a plant in 1953 as a stamp operator apprentice. The chief of our shop was State Prize Winner Dmitriy Ivanovich Leont'yev. He was a hard-working, strict and fair man. I recall that when he appeared in the shop on the morning shift, everyone was at his lathe, like a soldier, smart and self-disciplined. Everyone's lathe shone, and the floor had been swept. People ran to the smoking room once before and once after lunch. There were no slackers or absentees. Leont'yev quickly kicked them out."

Many years passed, and the author of the letter went back to his plant and looked up Leont'yev in his office. "He was sitting there tired and distraught, and on his desk was...a bottle of vodka. And he told me that a part had to be bored out urgently, but that the lathe hand was unwilling. He had bought him a half a liter, but even that had not helped. 'I am now going to earn a liter...,' the lathe hand said. And he left."

What a contrast! The same plant and the same manager, but the general situation had changed. And I should emphasize particularly the word general, which will immediately spare us many futile illusions.

Here in the mail we find convincing corroboration of this.

"The workers' grades often fail to correspond to their qualifications. They are 'awarded' a grade in order that their pay may be raised and that they may be restrained from leaving for a neighboring plant, where the pay is even higher. There is no interest in a real increase in qualifications. Sometimes workers on time rate are switched to piece rates, and their wages are then 'painted in'. But given the artificially created manpower shortage, there is no other solution" (G. Reshanskiy, Riga).

To judge from the letters, the very concept of "increasing exactingness" means for many people merely increasing the penalties for a breach of discipline: dismissal, fines.

"In order to put drunkards and slackers on the right track they must be forced to work. Determine specific terms of compulsory job training of, say, 1 to 6 months. It is necessary to ponder how to organize the work of these wrongdoers and devise the conditions of their day-to-day civic life, whether in conjunction with the family or in isolation. But the main thing is vigilant supervision" (I. Seredov, Leningrad Oblast).

It does not trouble the reader that not all these measures are consonant with the law. Moreover, these alone are not capable of solving the problem. I. Seredov's proposal is knocked down by a most simple situation of life in the cursory outline of the Sverdlovsk resident V. Semenov: "The point of the pledges is to have no absenteeism or to reduce it. Managers often cover up

absentees. Otherwise the shop would look bad in competition, and the managers would lose their bonuses. Who needs this? Thus who would be punishing whom?

Yet if we wish to rectify the situation, we must strive to ensure that every worker fulfill his norm and meet his production quota.

A true idea of exactingness emerges from a more in-depth analysis of economic interrelations.

Arrhythmia

"On the assembly line there is sometimes a shortage of some trifling part or the other, and then several hundred workers wash the windows or wander about with nothing to do. And there are placards on the walls describing how much our enterprise makes in 1 minute" (N. Palash).

"Some people have a conscience, for others it is easier to live without a conscience. Frequently the conscientious stand idle as much as the unconscientious" (S. Klimkin, construction engineer, Mirnyy).

"I have long been amazed by the following fact. If an enterprise, shop or section fails to fulfill the monthly plan, no one receives a bonus. But if the same collective fails to fulfill for a day or two, a week or 3 weeks, but then in the time remaining by way of overtime still fulfills the quarterly plan, everyone receives a bonus. If a worker is an absentee at the start of the month, he will not be specially punished. Nothing, they say, is perfect. It seems to me that this is the direct road to undermining discipline" (V. Shurubura, Khar'kov).

How long ago it was that we began to struggle against rush work! In recent decades our economy has become immeasurably more complex and composite. But there has been just as big an increase in the scale of the losses which we incur and will continue to incur owing to malfunctions, mismatches and disruptions of relations.

One reader reports that he in Belgorod receives clothes pegs from the Urals (and where, interestingly, are the same commodities with a Belgorod trademark sent? The Far East?). Equipment, raw material, machinery parts and spares travel, pointlessly at times, just as precisely, and some people are in an agony of expectation or hitting a scapegoat.... Everyone understands how well we would live if we rid ourselves of rush work. Why, then, does it still exist in spite of all the measures and all the resolve to do away with it once for all?

The readers' letters convincingly present a clinic, as medical workers would say, of the breaches of discipline connected with rush work. In rescuing the plan at the end of a month or quarter workers show up on Saturday and Sunday and receive overtime pay. This gradually becomes the norm. And a kind of economic incentive emerges for impeding, to the extent that this is within one's powers, fulfillment of the quota within the specified normal time. Work involving all hands is more profitable than normal rhythmic work....

The very acuteness of the problems connected with labor discipline demands that we soberly recognize that all the measures that have been adopted hitherto against rush work have proven ineffective and that they should not be counted on in the future. The point evidently is that all these measures left the existing economic mechanism, primarily the material-technical supply system, untouched. Some fundamentally new solutions are becoming increasingly urgent and essential. The correlation of centralized planning and local initiative, true freedom and true responsibility in the activity of the enterprises and associations, flexibility and expediency in the maneuvering of resources and ensuring reserves--we do not now have an opportunity to study in detail how this may be achieved, but there are very interesting proposals and ideas, which require, as pointed out at the CPSU Central Committee November (1982) Plenum, comprehensive development and thorough experimental testing.

One thing is clear: we must regulate all forms of discipline--labor, plan and state.

'Superfluous People'

"As my wife says, if we regulate discipline and increase labor productivity, will the enterprise not have to dismiss half of the people?" (S. Klimkin)

I fully agree with Comrade Klimkin's wife: given normal discipline, it would immediately become obvious that in a given shop, section or establishment there is not work for all the people, although all receive wages there.

"Superfluous people"? This, while not agreeing among themselves, is how the readers designate this problem. But they do not invest this formula with identical meaning.

For many people the "superfluous people" are drunkards, slackers, absentees and shoddy workmen. Their good-for-nothingness, their dishonesty and their impudent claims give rise to warranted anger and indignation. This is the most heated and most spirited group of letters--the evil is revealed and personified, here it stands, swaying on shaky legs, staring with a blank expression.

Let us examine the following group of letters.

"There is a surplus of engineering-technical personnel and service people in establishments and in plant shops even! In our tool section there are 33 principal workers, 5 engineering-technical workers, 6 maintenance workers and 3 inspectors. Dire lack of order!" (B. Semenov, Sverdlovsk)

"Who has free time during work hours? I declare with all responsibility that I have not once seen a stamp operator or production line worker take off anywhere. Those with free time during work hours are persons who are not overburdened with work--engineers, technicians and other workers in permanent positions with a monthly salary" (N. Palash).

It is significant that a person manning a lathe and producing physical assets does not appear to the readers "superfluous". However, scientific research

shows that ability to judge by the eye has been disturbed in our country. The very perception of the norm has become exaggerated, as the appetite of a person with excess weight is exaggerated. After all, it is no secret that work which at one plant is done by two-three workers is frequently performed by a dozen persons at another.

It is very symptomatic that the suffusion of the labor sphere with "superfluous people" coincides exactly in time with the period when we have begun to suffer more and more from indiscipline. The development of production should be accompanied by the release of manpower--this is a principal law of scientific-technical progress, but this is not occurring here! The personnel surplus is reducing labor intensiveness sharply. It is transpiring that few people are operating with a full, 100-percent workload and that not everyone is fully earning his pay.

The complexity of the problem and the difficulty of solving it amount to the fact that the personnel surpluses which are ruinous for the economy as a whole are profitable and even essential for individual enterprises. How, without "take-ons," to perform monthly and quarterly all-hands-to-the-pump work? How to cope with agricultural operations and the spot inspections at the vegetable repositories? Even the swelling of the managerial machinery has an objective basis: a mass of people is essential for preventing by all-hands-to-the-pump efforts disruptions in supply and the regulation of rhythmic operation. And if they do not achieve this, new managerial units and new positions are born.... "Dire lack of order!"--as reader Semenov expostulated. Well, I agree...and do not agree. Lax management is a specific and for itself even a highly regulated and intelligent model of economic activity: were this not the case, it would not be so tenacious....

But, a reader asks, have only a few efforts really been made to bring order to bear in this matter? Many have been made, of course.

"While working for a number of years as chief of a construction administration, I annually received a target for a 5-percent reduction in administrative-managerial personnel. Were this to have been fulfilled precisely, by the end of my work as chief of the construction and installation administration, there would have remained me and one-fourth of a secretary" (A. Akimov, Zelenogorsk).

I venture to argue with the readers who emphasize increased regulation in questions of the hiring and dismissal of workers. The most severe plans are put forward--right up to a categorical banning of a change in specialty more than once in a lifetime (!) and rigid restrictions on dismissal. Everything is precisely the other way around! It is essential in the economic mechanism itself to lay the foundations of a flexible, maneuverable personnel system giving an enterprise an interest in the immediate release of a worker who has become unnecessary. It is sufficiently clear even now how this needs to be done. Relieving management of the concern to find dismissed workers another job, providing the latter with the wherewithal for the period of the transfer to other work and creating a wide-ranging system of personnel retraining, which does not overburden the enterprise, inasmuch as no one can say in advance how scientific-technical progress will treat his occupation and speciality.

Furthermore, the enterprise must be guaranteed freedom to dispose of the resources saved from the wage fund and the certainty that they will not be taken away by the ministry to assist lagging enterprises and the city for its own needs.

The economic gain promised by a system of the extensive release and redistribution of manpower is obvious. But I would like to focus attention on the moral benefit also. A person would begin to value his job more.

"We need strong, intelligent discipline from the minister through the ordinary executant. A terse instruction, precise, rapid execution, punctuality and smooth relations without dithering, familiarity and lickspittling" (G. Kosnikov).

Reserve

A note running through the letters of my coevals and people of the older generation strikes the ear: "before people were better, they have now gotten worse." Can we agree with this without allowing for the allurement of the recollections of youth?

I pick up works of reference, I read, I consider.

Level of education. In 1959 some 83 percent of workers had incomplete secondary and primary education and less. Now the proportion of people with this level of education has been reduced to 40 percent.

Level of qualifications. Twenty years ago only 20 percent of workers had graduated from a vocational-technical school, tekhnikum or VUZ. The figure is now 40 percent.

The proportion of white-collar ["brain"] workers has increased: from one-fifth in 1959 to approximately one-third today.

Age composition. Young people born in the 1950's and later (20 years ago they were still children) now constitute a considerable proportion of our army of labor.

Unfortunately, the current system of management of labor does not correspond to the qualitative composition of today's workers. This system is oriented toward the worker of 20 years ago (and it is not he essentially who counts now) and his requirements and toward that which might be an incentive for him.

The letter of the same G. Kosnikov contains an interesting argument: "For many years I, and not only I, have heard the words 'it is necessary'. And this was sufficient. It is necessary means it is necessary. If now this imperative does not work, we become irritated and say bad, offensive words to the young people. Yet sometimes the young worker is summoned to a labor exploit, but he sees that his enthusiasm has to cover up someone's inefficiency, sluggishness and incapacity. We teach him to struggle against difficulties, but he goes to the vegetable repository and sees whence these difficulties come and understands, of course, that it is not he who should be struggling against them but the militia and the Department for combatting the embezzlement of socialist property."

Is this not why there are so many "punctures" in educational work, which should support the struggle for discipline? Appeals fall on deaf ears, promises fail to attract, reproaches fail to strike the conscience. Modern elements of the management of labor are being introduced slowly, unforgivably slowly. We have been saying that a system of vocational selection and vocational guidance is essential for too long now. It is more necessary with every passing day--man's selectiveness toward production and production's toward man are increasing. There are not enough changes, and everything that is being done is being done by the efforts of public-spirited persons. But what are needed, as everywhere, are specialists.

The letters which have been quoted have spoken sufficiently expressively about the influence on discipline of material incentives. I would like to add a few words about what seems to me particularly disturbing here. In 1940 the wages of engineering-technical personnel in industry--and this is, after all, the main prop of scientific-technical progress and its driving force--were more than double those of the worker. They are now practically comparable. Is this not why the worker-reader mentions the engineering-technical personnel derisively in the letters and as being among, from his viewpoint, the spongers? Some people see here respect for the labor of the worker and recognition of his high role in society. But underestimation of the social role and disparagement of specialists, who are most important for the normal functioning of society, engender a multitude of secondary deforming errors. Fairness is violated, and this never passes harmlessly either for the person who gains from this violation of for those who are hurt. Of course, all this is inseparable from the problem of the use of specialists and their qualifications, work loads and so forth. Many engineers here, for example, are not specialists at all but in fact technicians, employees and clerks--and they receive accordingly.

A multitude of letters....And virtually every writer is distinguished by a sharp experience of the moment. Each feels how much he and his comrades could produce over and above what is being produced from day to day. This very dissatisfaction and this unspent and, consequently, unavailing force of hand, mind and heart performs, I believe, a role of moral factor with an exceptionally high inner charge.

"Socialism is not only public ownership of the means of production, it is the ability to dispose of this property efficiently ["po-khozyayski"] and at a higher level than under capitalism" (the thought of reader V. Medvedev).

We need to suffuse the struggle to strengthen discipline with an understanding that we should have in mind the entire production chain. We cannot just reduce matters to a struggle against slackers.

It is necessary to afford full scope for creative energy--and then the very joy of full-bloodied, fruitful labor permitting society to spurt far ahead will become a moral incentive to unprecedented efficiency and might. The readers know this and believe in this. And for this reason why say: let's act!

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